

REMARKS

The Office Action mailed January 23, 2008 has been received and reviewed. Claims 1-20 are pending and are rejected. Claim 1 is amended. The Applicants submit that the claims are in condition for allowance for the reasons stated further below.

Rejection Of Claims 1-5 And 8-11 Under 35 U.S.C. § 103

Claims 1-5 and 8-11 are rejected under 35 U.S.C. § 103 as being unpatentable over Hawes, in view of Hofstad, Back and McEwan. The Examiner states that Hawes, in FIG. 4, discloses a submersible pump having a pump inlet 36, pump discharge outlet 20, distribution plate 26 as claimed, at least one opening 34 through the distribution plate sized to receive the pump inlet and leg members 38. The Examiner states that Hawes fails to teach the elements taught by Hofstad, which teaches a pump inlet, base housing 8 with a plurality of guide members which are arranged in relation to the pump inlet in such a way that they are positioning the pump inlet away from the floor of the pit or tank, and are capable of facilitating solid entrainment toward the pump inlet (referring to the fins at the bottom of the pump in FIGS. 1 and 3). The Examiner asserts that it would have been obvious to modify the pump assembly of Hawes with the guide members on the bottom surface of the distribution plate as taught by Hofstad. The Examiner adds that Hawes and Hofstad do not disclose the limitations taught by Back, which are identified by the Examiner as a discharge outlet and stationary discharge pipe 10, 12 opening located near the floor of the tank, discharge piping having an angled opening (FIG. 7) and a disconnect system comprising an angled face (69) surrounding the pump discharge outlet for assuring mating and sealing of the pump discharge outlet to the angled opening, and a discharge elbow stand (44, 18) configured with an angled opening and being secured to the base plate (20) and discharge piping (10, 12). The Examiner states that it would be obvious to modify the pump of Hawes in view of Hofstad by angling the discharge outlet and piping in order to guide the discharge outlet to sealingly engage the discharge piping as taught by Back. The Examiner further adds that Hawes, Hofstad and Back, in combination, fail to

disclose the limitations taught by McEwan, namely a pump P, discharge housing 42, inlet opening 68, distribution plate 30 having at least one opening for receiving a pump inlet upon lowering the pump into the tank in which the pump distribution plate is positioned, a centering member 44 surrounding each opening in the distribution plate 30 and the distribution plate 30 having a guide rail system. The Examiner admits that McEwan does not specifically disclose a sealing ring, but that it would have been obvious to provide a pump inlet with a sealing ring to create a sealing engagement of the pump inlet with the centering member 44 because in FIG. 4 of McEwan there is a sealing ring 84 disposed between the pump and outlet piping to prevent fluid escape.

The rejection is overcome by further clarifying amendment of claim 1. The present invention comprises a suction distribution plate and submersible pump system that facilitates, and thereby improves, the ability to entrain and remove solids that are entrained in fluid from a sump pit or tank. The system of the present invention comprises a suction distribution plate that is positioned at the bottom of the sump pit or tank, and further comprises a submersible pump that is specifically structured to be remotely positionable on the suction distribution plate to effect a simultaneous and comprehensive registration and sealing of the inlet and discharge outlet of the pump with corresponding structures (i.e., inlet-receiving opening and stationary discharge piping) on the plate when the pump is lowered into the tank.

Claims 1-16 are each rejected as being obvious over Hawes as the primary reference. The Examiner asserts that Hawes teaches a pump and distribution plate as claimed. The rejection of claims 1-16 is, therefore, traversed because Hawes, like all of the other cited references, fails to disclose a suction distribution plate. While Hawes discloses a mounting plate to which a pump is secured for enabling the lowering of the pump into a tank, the mounting plate of Hawes does not operate, and is not intended or structured to operate, as a suction distribution plate. More importantly, Hawes fails to teach a system for remotely disconnecting the pump to the mounting plate. Hawes is very explicitly directed to securing the pump to the mounting plate outside of the tank, and lowering or lifting out the entire pump and plate assemblage as one unit.

Consequently, no one of skill in the art can find any suggestion whatsoever in Hawes for providing a suction distribution plate for remotely receiving a submersible pump as claimed.

The Examiner next asserts that Hofstad discloses guide members (i.e., fins) on a base housing 8 that are capable of entraining solids and that it would be obvious to implement the fins of Hofstad on the mounting plate of Hawes to obviate claims 1-3. The "fins" of Hofstad are, in fact, an integral part of the casting configuration of the pump housing in which the impeller rotates. Nothing is Hofstad teaches or remotely suggests that the fins may simply be plucked from the pump housing and placed on a plate to provide guide members on the plate for entraining solids-laden fluid. Nothing in Hawes remotely suggests that guide members can be placed on the mounting plate to produce a suction distribution plate as claimed. Thus, no *prima facie* case of obviousness can be established in any presumed combination of Hawes and Hofstad because not only does Hawes teach away from the system that is claimed, but there is simply no motivation whatever to combine the references as the Examiner suggests.

In addition to the fact that Hawes and Hofstad are not combinable as asserted to obviate the claims, and no motivation is found in those two references to provide the suction distribution plate and pump as claimed, none of the other references teach or disclose a suction distribution plate either. Consequently, no cited reference identifies or appreciates the problem addressed in the present invention, and no cited reference teaches a suction distribution plate, or any plate of any kind, that is structured to receive and register a pump inlet and discharge outlet when the pump is lowered into the sump pit or tank as claimed. Again, while the cited secondary references may teach pumps that are configured in some manner with guide rails to lower the pump into a sump pit or tank, none of them discloses the use, or configuration, of a submersible pump to exactly register and seal with a downhole suction distribution plate as claimed. Claims 1-13 are, therefore, not obviated by any of the cited references for that reason, and are patentable over all of the cited references.

The Applicant notes, specifically, that Back does not teach a suction distribution

plate as argued above; therefore, no reference teaches a suction distribution plate. The Applicants argue, however, that McEwan does not teach a suction distribution plate either. While McEwan discloses a bisected tank, one side of which has a false floor 30, the false floor is not described, nor functions, as a suction distribution plate as claimed. The false floor 30 of McEwan does not disclose being constructed with guide members to entrain solids to a pump inlet. Once again, no *prima facie* case of obviousness can be established since neither Hawes, Hofstad, McEwan or Back disclose a suction distribution plate having guide members as claimed. Therefore, none of the references, including McEwan, appreciate, disclose or teach the present invention as claimed.

Rejection Of Claim 6 Under 35 U.S.C. § 103

Claim 6 is rejected under 35 U.S.C. § 103 as being unpatentable over Hawes in view of Hofstad, Back, McEwan and further in view of Englessen. The Examiner states the Hawes, Hofstad, Back and McEwan disclose the invention, but do not teach the limitations of Englessen, namely a pump with inlet 13, discharge outlet 14, discharge elbow stand (30), guide rail system with rail 29 and a guide rail bracket 33 connected to the pump 10. The Examiner states that it would be obvious to implement the guide bracket connected to the pump in order to support the pump unit when it is being raised and lowered on the rail. The rejection is traversed. The Applicants reiterate the arguments made above with respect to claim 1 and state that neither Hawes nor Hofstad, teach the invention as claimed by claim 1, and therefore by claim 6. Neither Hawes, Hofstad, Back nor McEwan teach, in combination, a submersible pump and distribution plate configured to effect comprehensive and sealing registration between a pump and a suction distribution plate when lowering the pump downhole. Therefore, claim 6 is not obviated.

Rejection Of Claim 7 Under 35 U.S.C. § 103

Though unclear, Claim 7 appears to be rejected under 35 U.S.C. § 103 as being unpatentable over Hawes, Hofstad, Back, and possibly in view of McEwan, and further

in view of Englesson. The Examiner then states that Hawes, Hofstad, Back and McEwan teach the invention, except for the limitations taught by Englesson, namely a pump with an inlet 14, discharge elbow stand 23, guide rail system with rails 22 and a guide rail bracket 28 connected to the discharge elbow stand 23 to guide movement of the pump into and out of the well, and that it would have been obvious to combine Englesson with the other references to save space by having them on a common base plate.

The rejection is traversed. For the reasons stated above with respect to claim 1, neither Hawes, Hofstad, Back nor McEwan disclose the claimed invention. Therefore, claim 7 is not obviated by the claimed invention.

Rejection Of Claim 12 Under 35 U.S.C. § 103

Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over Hawes, Hofstad, Back and McEwan, and further in view of Oakes. The Examiner states that Hawes, Hofstad, Back and McEwan disclose the invention, but for the limitations taught by Oakes, namely a pump 5, a guide rail assembly 13, discharge outlet 12 connected to discharge piping 7, 8, where the pump discharge outlet is configured to retain a discharge seal ring 44 positioned thereabout for sealing against the opening of the discharge piping 7. The Examiner states that it would be obvious to implement a seal ring in the angled face of the discharge outlet in order to seal the gap between the outlet and the piping. Again, for the reasons stated above with respect to claim 1, neither Hawes, Hofstad, Back or McEwan disclose the claimed invention. Oakes, like the other references, does not disclose a suction distribution plate and does not disclose any appreciation for the problem being solved by the present invention. Thus, even if Oakes were fairly considered to disclose a seal ring, its addition to the other references cannot bootstrap the combined references into obviation of claim 12.

Rejection Of Claim 13 Under 35 U.S.C. § 103

Claim 13 is rejected under 35 U.S.C. § 103 as being unpatentable over Hawes

and Hofstad, in view of McEwan. The Examiner states that Hawes, in FIG. 4, discloses a submersible pump having a pump inlet 36, pump discharge outlet 20, distribution plate 26 as claimed, at least one opening 34 through the distribution plate sized to receive the pump inlet and leg members 38. The Examiner states that Hawes fails to teach the elements taught by Hofstad and McEwan. The Examiner states that Hofstad discloses a pump inlet, base housing 8 with a plurality of guide members which are arranged in relation to the pump inlet in such a way that they are positioning the pump inlet away from the floor of the pit or tank, and are capable of facilitating solid entrainment toward the pump inlet (referring to the fins at the bottom of the pump in FIGS. 1 and 3). The Examiner states that McEwan teaches a pump P, discharge housing 42, inlet opening 68, distribution plate 30 having at least one opening for receiving a pump inlet upon lowering the pump into the tank in which the pump distribution plate is positioned, a centering member 44 surrounding each opening in the distribution plate 30 and the distribution plate 30 having a guide rail system. The Examiner admits that McEwan does not specifically disclose a sealing ring, but that it would have been obvious to provide a pump inlet with a sealing ring to create a sealing engagement of the pump inlet with the centering member 44 because in FIG. 4 of McEwan there is a sealing ring 84 disposed between the pump and outlet piping to prevent fluid escape. The Examiner states it would have been obvious to implement the centering member in order to receive and mount the inlet of the pump in a slip-fit relation (citing McEwan, col. 10, lines 25-29). The rejection is traversed.

The arguments set forth above are again reiterated. Claim 13 recites a pump distribution plate having guide members and a centering plate. The principal references cited against the claim are Hawes and Hofstad. As noted previously, Hawes does not teach a distribution plate as claimed. Hawes discloses a mounting plate to which the pump is secured outside the tank so that the mounting plate with the pump secured to it are lowered as a unit into a tank. The mounting plate of Hawes does not disclose guide members. Hofstad discloses fins integrally cast into a pump casing. Nothing in Hawes suggests placement of guide members on the mounting plate, and

nothing in Hofstad suggests removing the integrally formed fins from the pump casing to place them on a plate. Nothing in either reference provides any motivation for combining the elements as the Examiner suggests and no *prima facie* case for obviousness can be established. McEwan, moreover, does not teach a suction distribution plate having a plurality of guide members, or a centering member as claimed. Even if McEwan were combinable with Hawes and Hofstad as suggested by the Examiner, claim 13 would still not be obviated.

Rejection Of Claims 14, 15 And 16 Under 35 U.S.C. § 103

Claims 14, 15 and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Hawes in view of Hofstad and McEwan, and further in view of Back. The Examiner states that Hawes in view of Hofstad discloses the invention, but does not explain what McEwan discloses with respect to the claims. The Examiner further states that Hawes and Hofstad do not disclose the claimed elements disclosed by Back, including a pump P, a discharge outlet (14) and discharge piping (10,12) having an angled opening (FIG. 7) and a disconnect system comprising an angled face (69) surrounding the pump discharge outlet for assuring mating and sealing of the pump discharge outlet to the angled opening, and a discharge elbow stand (44, 18) configured with an angled opening and being secured to the base plate (20) and discharge piping (10, 12).

The rejection is traversed in the first instance for lack of a specific explanation of McEwan's contribution to the obviation of claims 14, 15 and 16. Nonetheless, claims 14-16 depend from claim 13 and include the limitations of that claim. Consequently, Hawes and Hofstad fail to teach or suggest the claimed invention as noted above with respect to claim 13. Therefore, claims 14-16 are not obviated by the cited references.

Rejection Of Claim 17 Under 35 U.S.C. § 103

Claim 17 is rejected under 35 U.S.C. § 103 as being unpatentable over Englessen in view of McEwan. The Examiner states that Englessen discloses a

submersible pump having a vertical disconnection system for drop in and lift out of the pump, the pump having a central axis, an inlet 13, a discharge outlet (15), guide rail bracket 6, 33 for sliding engagement with a guide rail system 5, 29 and an angled face on the discharge outlet as claimed. The Examiner states that Englesson does not disclose the limitations taught by McEwen, namely a pump P, discharge housing 42, inlet opening 68, distribution plate 30 having at least one opening for receiving a pump inlet upon lowering the pump into the tank in which the pump distribution plate is positioned, a centering member 44 surrounding each opening in the distribution plate 30 and the distribution plate 30 having a guide rail system. The Examiner again admits that McEwan does not specifically disclose a sealing ring, but that it would have been obvious to provide a pump inlet with a sealing ring to create a sealing engagement of the pump inlet with the centering member 44 because in FIG. 4 of McEwan there is a sealing ring 84 disposed between the pump and outlet piping to prevent fluid escape. The Examiner states that it would be obvious to modify the pump of Englesson by implementing a centering member on a distribution plates to receive a better stabilize the pump in its mounting. The rejection is traversed.

Claim 17 recites a submersible pump structured for remote positioning on a suction distribution plate, the inlet of the pump having a seal ring to aid in positioning and sealing the pump to the distribution plate. Inasmuch as Englesson doesn't teach or suggest a pump structured for positioning the inlet of the pump on a plate as claimed, Englesson cannot possibly provide any motivation for structuring a pump as claimed. Moreover, since McEwan does not have any recognition of the need to provide a pump that is structured to register both the inlet and the discharge outlet of the pump with corresponding openings in a distribution plate as claimed, and McEwan, therefore, does not teach a seal ring as claimed, McEwan cannot possibly provide any motivation for combination with Englesson. No *prima facie* case of obviousness can be established and claim 17 is not obviated for that reason.

Rejection Of Claim 18 Under 35 U.S.C. § 103

Claim 18 is rejected under 35 U.S.C. § 103 as being unpatentable over

Engleson in view of McEwan. The Examiner states that Engleson discloses the general conditions claimed except for the express disclosure that the angled face is between about five and about forty-five degrees to the central axis, but that it would be within the skill in the art to make an angled face as claimed because the claimed values are merely an optimum or workable range. The rejection is traversed for the same reasons that claim 17 is not obviated by Engleson and McEwan. Engleson and McEwan do not provide the claimed structure and function of a pump structured to register with a suction distribution plate. Therefore, claim 18 is not obviated by the references.

Rejection Of Claims 19 And 20 Under 35 U.S.C. § 103

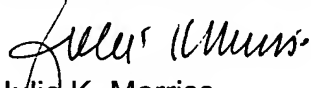
Claims 19 and 20 are rejected under 35 U.S.C. § 103 as being unpatentable over Engleson, in view of McEwen and Oakes. The Examiner states that Engleson and McEwen disclose the invention, except for the limitation taught by Oakes, namely a submersible pump as claimed, a guide rail assembly (13,20), a discharge outlet (12) configured to retain a discharge seal ring (44) wherein the face is positioned on a discharge adaptor (31) which is further configured with a contact surface for contacting the discharge outlet of the pump, said discharge adaptor being distanced from and unsupported by the guide rail bracket (20). The Examiner states it would have been obvious to modify the pump assembly of Engleson in view of McEwen by implementing a seal ring in the angled face of the discharge outlet in order to seal the gap between the outlet and the piping (citing Oakes, col. 6, lines 41-45) and by implementing the angled face of Engleson on a discharge adaptor 31 in order to better connect the discharge piping to the pump (citing Oakes, col. 5, line 55 to column 6, line 18). The rejection is traversed for the same reasons stated above with respect to claims 17 and 18. Additionally, it is noted again that Engleson specifically states that the flanges 15, 16 of the angled faces of the abutted discharge pipes are forced together to make a seal without need of further tightening of the joint. (Col. 2, lines 57-61). Oakes discloses a vertical face on the abutted discharge piping and inlet that is contrary to the teaching of Engleson. Thus, Engleson and Oakes cannot be

combined to obviate the claims. There is no motivation to combine the references and no reasonable expectation for success of the combination. Claims 19 and 20 are not obviated, therefore.

CONCLUSION

In view of the amendments made and arguments presented, the Applicants submit that the claims are now in condition for allowance. Reconsideration and allowance are respectfully requested.

Respectfully submitted,



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Date: May 23, 2008